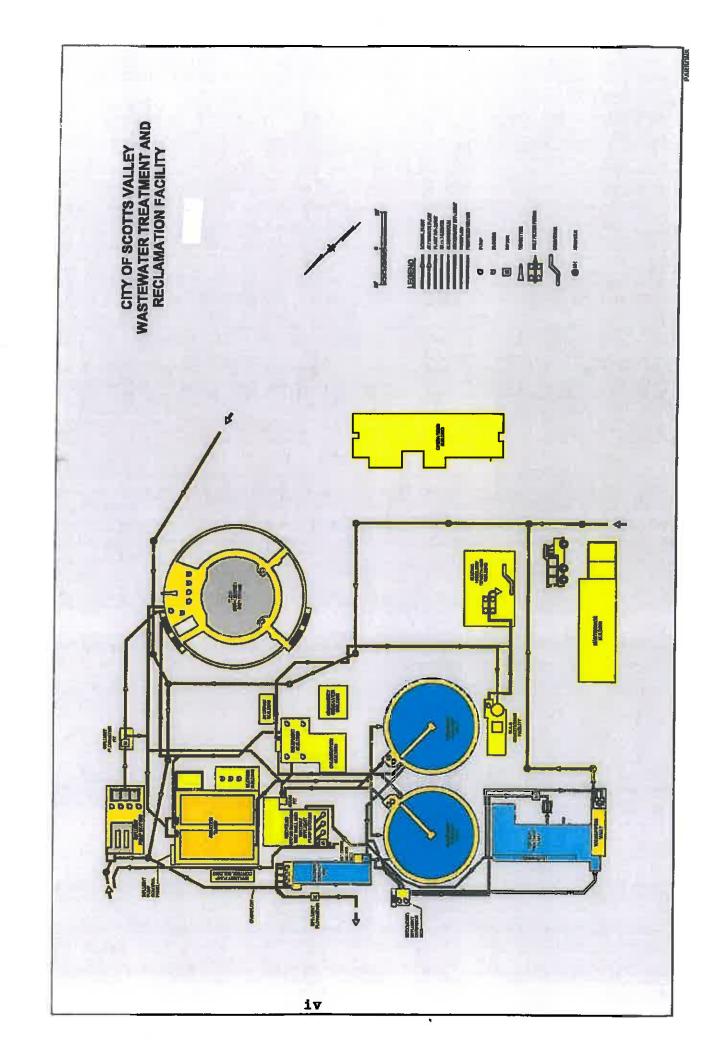


City of Scotts Valley



Wastewater Reclamation Facility
Annual Report
2021



CITY OF SCOTTS VALLEY WASTEWATER DIVISION STAFF – 2021

Kati King Wastewater Division Manager Wastewater Operator Grade III # 6692

Lab Analyst Grade IV # 1305214090

Art Soto Senior Wastewater Plant Operator Grade II # 10607

Justin Granados Wastewater Operator Grade II # 45076

Tyler Hebard Wastewater Operator Grade I # 75016

Colton Babcock Lab Analyst Assistant

Kati King

Art. Soto

Justin Granados

Tyler Hebard

Colton Babcock

CITY OF SCOTTS VALLEY WASTEWATER TREATMENT FACILITY ANNUAL REPORT 2021

Plant Summary and Compliance

The plant experienced many upsets throughout 2021, but was carefully navigated as to not experience any violations.

In 2021 the total recycle water produced in the plant's recycle filter plant was: 64.13 million gallons. Pasatiempo golf course continues to use the plants secondary effluent to produce their own tertiary water for use on their golf course.

Secondary Effluent suspended solids averaged 12.4 mg/L (a 95.2% removal rate), effluent cBOD's averaged 7.8 mg/L (a 97.1% removal rate), and effluent BOD's averaged 9.2 mg/L (a 97.1% removal rate).

Laboratory

The City of Scotts Valley Wastewater Reclamation Facility is classified as a discharger into the Monterey Bay, thus NPDES permit is very stringent compared to Facilities that do not discharge into the Bay. The lab is kept very busy to satisfy required analyses to satisfy NPDES permit. The lab maintains it Accredited Fields of Testing as a California State Certified Lab. New changes with the adoption of TNI standards are taking place within the lab to comply with future TNI laboratory standards which were just adopted into effect 2023 giving the lab a year to become fully TNI compliant.

Laboratories used during 2019 were: Bioassay Testing:

Inorganic Chemistry and Microbiology: Aquatic Bioassay & Consulting Labs

City of Scotts Valley WWTP 29 N. Olive Street

700 Lundy Lane Ventura, CA 93001

Scotts Valley, CA 95066 ELAP Certificate No. 1907

ELAP Certificate No. CA 1062

HVWS, TCDD/Furans:

Metals/Inorganic and Organic Chemistry

Frontier Analytical Laboratory BC Laboratories, Inc. Monterey Bay Analytical Lab

5172 Hillsdale Circle 4100 Atlas Court 4 Justin Ct. Ste. D

El Dorado Hills, CA 95762 Bakersfield, CA 93308 Monterey, CA 93940

ELAP Certificate No. CA 02113 ELAP Cert. No. 1186 ELAP Cert, No.2385

California Department of Fish and Game Oil and Grease

2005 Nimbus Road City of Santa Cruz Wastewater Lab

Rancho Cordova, CA 95670 110 California St.

ELAP Certification No. CA 1622 Santa Cruz, CA 95060

ELAP Certification No. 1176

Lift Stations

The City of Scotts Valley owns and operates seven lift stations at various locations. Throughout the City. All stations are inspected three times each week. During these routine inspections, hour readings are taken to verify normal running times and flow throughput. Each pump is individually started and stopped to ensure proper operation, and wet-wells are visually inspected to confirm water levels with digital level reading on automatic pump controllers. Once each week, stations equipped with permanent emergency generators are tested on emergency power to ensure proper operation. Five stations are equipped with permanent emergency stand-by power. At this time, no other stations require permanent on-site emergency power, as limited flows allow ample time for City staff to respond to alarm conditions and provide portable generator power prior to overflows occurring.

All of the City's seven stations have back-up pumps, redundant controls, and alarm SCADA systems that automatically call 24-hour emergency personnel in case of a power outage or high-level conditions. It also provides a baseline for history of pump operations, level and event history.

Collection System

The City's sanitary sewer collection system is made up of approximately 40 miles of pipeline. City crews spend as much time as is available each week performing preventative maintenance using a combination vacuum/hydro-jet truck to clean the

lines. The City had no spills in 2020.

Maintenance and Repairs/ Plant Improvements

- Second Duperon bar screen installed
- Auger repaired on IPS Wash compactor
- Aeration pipes replaced with stainless steel, and an isolation valve installed.
- Tertiary P501, P502, and P503 overhauled and new seals replaced.
- New structure built over Methanol Pump station to keep sun and heat off pump
- SCADA PLC system upgrade by SYCAL
- New Dump truck acquired for hauling sludge

O & M Manual

The plant's main operations and maintenance manual (O&M) was not changed during 2020; however, the plant's O&M manual library was updated to include new equipment that was placed into service over the past year. Updating the plant's O&M manual takes place on an ongoing basis. We have one O&M manual that is used for operational guidelines and minor service to plant equipment. We also catalog individual O&M's for every piece of equipment in place at the treatment plant, collection system, and lift stations.

SSMP & Sewer Master Plan

SSMP & Sewer Master Planis still being carefully put together by Carollo Engineers.

Training

- All staff is working on New SOP's for new equipment at the plant.
- All staff participates in the plant's in-house safety/training meetings that are conducted every other Thursday throughout the year.
- All Operations and Laboratory staff participated in several one-day and multi-day training classes and virtual seminars related to wastewater treatment, laboratory and maintenance.
- Lab Environmental Compliance Mgr. and Operators attended virtual CWEA training meetings throughout 2021.

Source Control Program

Industrial and Municipal Permittees

Several groundwater wells operated by the Scotts Valley Water District are backwashed periodically to clean filtering devices and the water must be treated as necessary to remove pollutants to concentrations below the City of Scotts Valley Sanitary Sewer discharge limits. The industrial discharger permit under which the District operates requires that pretreatment filtration devices be installed and backwash from the Scotts Valley Water District wells is sampled at least once annually and self-reported. The results from samples collected in 2021 at the El Pueblo, Orchard Run, and Well 10 sites were below limits specified in

the industrial permit for TSS, manganese, arsenic, and iron.

The San Lorenzo Valley Water District also operates under a permit that specifies discharge requirements for backwash water from the Mañana Woods groundwater well. The backwash water must be treated, as necessary, to remove pollutants to concentrations below the City of Scotts Valley Sanitary Sewer discharge limits. There was no activity at Mañana Woods in 2021 and there are no plans to use the well ir the future.

Steel Bonnet Brewery continues to operate under an industrial permit that requires brewery wastewater, which has high biological oxygen demand (BOD) to be hauled offsite for disposal rather discharged to the sewer. A waste hauling manifest is submitted to the City to document each time brewery wastewater is side-streamed and hauled of offsite, which is approximately once per week.

The one remaining, significant industrial user (SIU) in the City of Scotts Valley is ThermoFisher, a categorical metal finishing industry (40 CFR 433.15). ThermoFisher self-reports on a biannual basis in January and June. All analyte levels were below regulatory limits.

Environmental Compliance and Source Control

In-person inspections of businesses resumed in 2021 following a period of remote inspections conducted during the Covid-19 restrictions first imposed in 2020. Inspectors review Best Management Practices (BMP) for reducing Fats, Oils, and Grease (FOG) and other solids in sewer lines, reducing pollutants entering storm drains, and helping businesses understand what can and should be recycled.

During FY 2020-2021, approximately 93 businesses in Scotts Valley were inspected for wastewater and storm water compliance. Forty percent of the inspected businesses are restaurants, Other business sectors that are inspected include vehicle service, manufacturers, gas stations, machine shops, landscapers, contractors, and dry cleaners.

A BMP pamphlet that details the appropriate ways to reduce FOG in sewer laterals and municipal sewer lines is distributed to food service establishments. It also details proper janitorial cleaning methods, the differences between interior and exterior grease interceptors and their maintenance requirements. Inspections are usually unannounced, but some remote inspections are scheduled because they require more time from facility personnel. Some facilities receive multiple inspections if corrective actions are required.

Several years of thorough and consistent annual inspections of local food service facilities have proven to be highly effective, as most facilities are operating in compliance with the local fats, oils, and greases (FOG) program and with local ordinances. In 2018/2019, a special effort was made to ensure that coffee shops, which were previously exempt from grease interceptor requirements, install an interceptor. Consequently, all six coffee shops have installed a grease interceptor, leaving only one business without one. The City is working to bring the final site into compliance.

In 2020, a letter and survey were sent to all dentists in the service area of the Scotts Valley Wastewater Treatment Facility. The letter and survey were an effort to meet the Federal Dental Amalgam Rule requirements as contained in Title 40 of the Code of Federal Regulations (CFR), Part 403 & 441. The 'One-time Compliance Report' required by the dental regulations was completed and returned by all

dentists operating in the service area. The intention of the report was to ascertain how each dental practice handles amalgam waste and to ensure that it is being disposed of according to the BMPs outlined in 40 CFR 441.30(b) or 40 CFR 441.40(b) All are in compliance.

Public Education and Outreach

Green Business

Scotts Valley continues to support the Monterey Bay Area Green Business Program. Goals of the Green Business Program include promoting pollution prevention, waste minimization, and implementing best management practices that go above and beyond the regulatory standards. Since its launch in July 2004, the program has developed nineteen different business certification sectors, including: restaurants, plumbers, office/retail facilities, hotels/hospitality services, custodial companies, beauty salons, laundromats, wineries, painters, and landscapers, property management/multi-family dwellings, schools, medical facilities, garment cleaners, vehicle service facilities, auto body shops, printers, contractors/remodelers, and pharmacies. A significant portion of the program for restaurants, hotels, and plumbers is dedicated to minimizing discharges of fats, oils, and greases (FOG) into the sanitary sewer. The program is supported by a database launched in 2010, which allows it to collect metrics on water and energy savings, and pollution and waste reduction, and so assess the program's impacts.

Twelve businesses are presently certified through the Green Business Program in Scotts Valley with three more undergoing the process of certification.

Fats Oils Grease Outreach

FOG outreach to residents of Scotts Valley is done twice annually through the Wasteline newsletter that GreenWaste Recovery sends to its customers. The following information was contained in the Fall newsletter:

FATS, OILS & GREASE (FOG) Clog Sewers! Scrape It, Can It, Trash It

Cooking fats, oils, and grease (FOG) are the leading causes of sewer pipe clogs. When poured down sinks, drains, or toilets, FOGs eventually cool, harden, and build up on the inner walls of sewer lines. As sewage flow is restricted, it can back up in your home, on your property, or even in the street. Protect your pipes and your home. Don't let items like these down your drains:

Cooking oils (includes deep frying oils)
Olive oil
Butter or margarine
Shortening
Lard
Salad dressings
Sauces and gravies
Meat fats
Milk, cream, ice cream
Marinades
Sandwich spreads

What You Can Do: Scrape It, Can It, Trash It

After cooking, let your fats, oils, and grease cool. For small amounts of FOG, scrape or wipe the pan. For larger amounts, scrape it into a covered disposable container. Either way, throw the biproduct into your trash.

Sharp Solutions and Pharmaceutical Stewardship

The City of Scotts Valley staff members, in collaboration with the County of Santa Cruz and other city agencies, were successful in obtaining a grant in 2008 from the California Integrated Waste Management Board (ClWMB) to implement a pharmaceutical and sharps disposal program. Since that time, the Sharp Solutions for Home Medicines Program has provided a convenient and permanent system to dispose of home-generated used sharps and unwanted pharmaceuticals in the County of Santa Cruz. The County established 43 convenient and well-publicized drop-off locations, primarily at pharmacies, throughout the region. Since that program was founded, nearly all the sites have been privatized and are funded and maintained by the pharmacy or healthcare provider hosting the collection bins. In 2017, the City adopted ordinances consistent with the mission of the Pharmaceutical Product Stewardship Workgroup (ppswg.org) that requires producers and retailers of drugs and sharps to maintain take-back kiosks onsite and to keep records as per the requirements Chapter 8.38 - Scotts Valley Safe Drug and Sharps Disposal

2021 PLANT FLOW AND RAINFALL

	Total Plant Flow Eff.+Rec.MGD	Flow Daily Flow Inst. Mec.MGD MGD MGD		Recycled Total Flow Million Gallons	Rainfall Inches
lanuana	Mo. Total	Mo. Total	(peak)	Mo. Total	(Total)
January	23.801	22.135	1.41	1.666	10.05
February	19.644	18.133	1.14	1.511	1.27
March	21.900	19.010	1.12	2.890	2.26
April	19.625	14.296	1.06	5.329	0.01
Мау	19.698	12.447	1.07	7.251	0.00
June	18.283	10.685	0.94	7.598	0.00_
July	20.338	9.525	0.90	10.813	0.00
August	18.667	8.135	0.83	10.532	0.00
September	18.046	8.823	0.71	9.223	0.00
October	20.417	14.916	1.02	5.501	7.43
November	19.525	18.219	1.11	1.306	2.59
December	29.387	28.873	1.79	0.514	28.08
			necessari.		
Total	249.33	185.20		64.13	51.69
Average	20.78	15. <u>43</u>	1.09	5.34	4.31
Maximum	29.39	28.87	1.79	10.81	28.08
Minimum	18.05	8.14	0.71	0.51	0.00

ADDWF, MGD	0.621
Eff + Recycle	

TABLE 2

2021 Influent & Effluent Suspended Solids

	Influent mg/L	Effluent mg/L	Effluent Ib/day	Percent Removal
January	309	18	116	94.3%
February	270	16	95	94.0%
March	366	9	48	97.2%
April	289	14	46	94.8%
May	292	15	50	94.5%
June	331	8	27	97.3%
July	287	5	12	98.3%
August	261	5	12	97.9%
September	251	9	26	96.5%
October	283	7	24	97.6%
November	267	17	74	93.2%
December	256	25	199	87.0%
Average	288	12	61	95.2%
Maximum	366	25	199	98.3%
Minimum	251	5	12	87.0%

2021 Influent & Effluent BOD & cBOD

	Influent	Effluent	Effluent	BOD	Influent	Effluent	Effluent	cBOD
	BOD	BOD	BOD	Percent	cBOD	cBOD	cBOD	Percent
	mg/L	mg/L	lb/day	Removal	mg/L	mg/L	lb/day	Removal
January	360	7	13	96.2%	302	11	54	96.2%
February	312	11	11	96.6%	238	7	32	97.1%
March	389	9	6	98.5%	296	6	27	98.1%
April	338	4	13	96.0%	291	11	54	95.8%
May	292	7	12	95.8%	258	10	48	95.6%
June	382	7	7	98.0%	324	5	26	98.2%
July	361	6	6	98.3%	304	6	26	98.2%
August	275	7	6	97.5%	235	6	27	97.6%
September	323	8	တ	97.1%	271	7	31	97.4%
October	377	7	6	98.5%	329	6	27	98.2%
November	342	7	10	96.8%	327	တ	41	97.4%
December	313	7	12	95.8%	277	11	51	95.9%
								0.97135
(*** *** + 10* ** ******************************	CONTENT I SO	V			_		5	
Average	339	7	9	97.1%	288	8	37	97.1%
Maximum	389	11	13	98.5%	329	11	54	98.2%
Minimum	275	4	6	95.8%	235	5	26	95.6%

TABLE 4

2021 Tertiary Effluent Nitrogen

	Tertiary Ammonia mg/L as N	Tertiary Organic N mg/L as N	Tertiary Nitrate mg/L as N	e Nitrite		Influent Total N mg/L as N	Tertiary Nitrogen Removal Percent
January	0.19	1,3	3.3	<	0.10	12.59	63
February	0.20	0.6	3.2	<	0.10	12.36	68
March	0.16	0.9	2.0	<	0.10	9.05	67
April	0.18	1.2	3.8	<	0.10	12.25	59
May	0.28	0.8	1.9	<	0.10	8.79	69
June	0.17	0.6	3.1	۸	0.10	10.64	64
July	0.27	0.9	3.3	٧	0.10	10.68	60
August	0.21	1.2	3.8	٧	0.10	12.93	60
September	0.16	0.9	2.6	٧	0.10	13.57	73
October	0.17	1.0	3.0	<	0.10	10.03	60
November	0.14	0.9	1.3	٧	0.10	11.16	79
December	0.11	1,0	1.4	٧	0.10	9.10	73
Average	0.19	0.9	2.7	<	0.10	11.1	66
Maximum	0.28	1.3	3.8		0.27	13.6	79
Minimum	0.11	0.6	1.3	<	0.01	8.8	59

TABLE 5

2021 Influent & Effluent pH and Effluent Turbidity, Settleable Solids, and Oil & Grease

	Influ en t pH Std Un its	effluent pH Std Units	Effluent Turbidity NTU		Effluent Settleable Solids		Effluent Oil & Grease mg/L		Effluent Oil & Grease Ib/day
January	8.1	6.9	10.7	<	ml/L 0.1	<	5	<	30
February	8.1	7.0	7.3	<	0.1	<u>`</u>	5	<	30
March	8.0	6.9	11.3	<	0.1	<	5	<	30
April	8.1	6.9	7.3	<	0.1	<	5	<	30
May	8.1	7.0	5.8	<	0.1	<	5	<	30
June	8.1	7.1	7.8	<	0.1	<	5	<	30
July	8.0	7.1	2.5	<	0.1	<	5	<	30
August	8.0	7.2	7.7	<	0.1	٧	5	<	30
September	8.1	7.2	8.9	<	0.1	<	- 5	<	30
October	8.1	7.2	6.2	<	0.1	<	5	<	30
November	8.2	7.3	10.2	<	0.1	<	5	<	30
December	7.9	7.0	9.0	-	0.2	<	5	<	30
e —									
Average	8.1	7.1	7.9	<	0.1	<	5.0	<	30
Maximum	8.2	7.1	11.3	<	0.2	<	5.0 5.0	<	30
Minimum	7.9	6.9	2.5	<	0.1	<	5.0	<	30

2021 Effluent Chlorine Residual and Bacteriological Quality

		Chlorine	Total		Fecal	
		Residual mg/L	Coliform MPN/100mL		Coliform MPN/100mL	Enterococcus MPN/100mL
January	<	@Santa Cruz 0.01	7590		260	129
February	<	0.01	2820	<	250	72
March	<	0.01	1080		240	47
April	<	0.01	4020		440	60
May	<	0.01	2700	<	280	105
June	'	0.01	3380		350	100
July	<	0.01	3890	<	220	106
August	<	0.01	4910	<	380	64
September	<	0.01	4780		950	175
October	<	0.01	1670		1120	11
November	<	0.01	1900	<	480	147
December	<	0.01	7200	<	440	93
Geometric	<	0.01	3,316		391	78
Maximum	<	0.01	7,590		1,120	175
Minimum	<	0.01	1,080	<	220	11

2021 Sludge Wasting

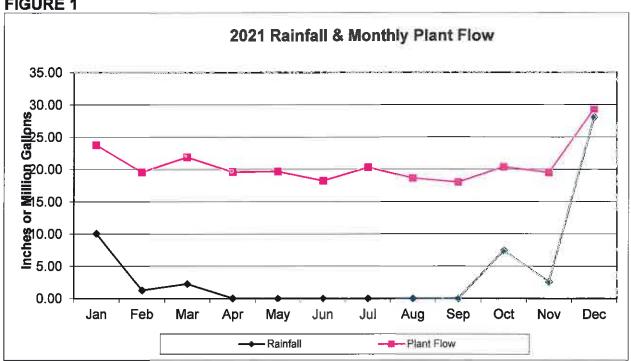
	WAS	WAS	Sludge	Hours	Sludge %
	Flow	Percent	Hauled	Press or	Solids
	MGD	Solids	Tons/mnth	Aeromod	
			(dry wt)	per/mnth	
January	1.2553	1.22	17.7	181.1	14.2
February	1.4168	1.20	15.8	198.5	16.2
March	1.5316	0.90	20.9	226.5	15.9
April	1.4935	1.02	22.6	214.0	15.5
May	1.3356	0.98	21.6	194.5	15.1
June	1.3344	0.76	21.6	191.5	14.5
July	1.3517	1.11	28.0	188.5	13.6
August	0.9662	1.02	15.8	139.5	13.9
September	0.9353	1.84	16.3	127.0	14.6
October	0.8997	<u>1.</u> 11	11.7	128.5	14.7
November	1.0116	1.22	16.7	138.5	13.8
December	0.8956	0.82	19.9	160.0	14.1
Total	14.427		228.6	2,088	
Average	1.202	1.10	19.0	174	14.7
Maximum	1.532	1.84	28.0	227	16.2
Minimum	0.896	0.76	11.7	127	13.6

TABLE 8

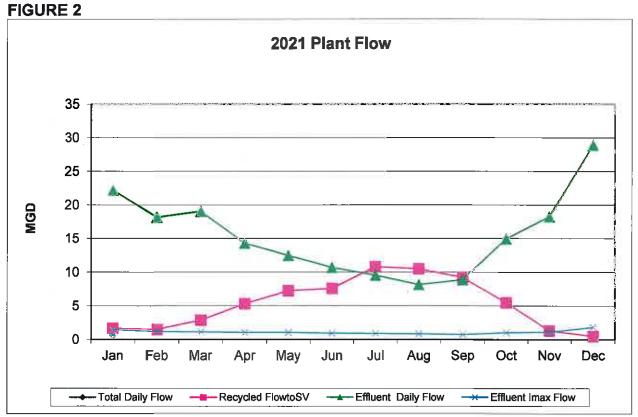
2020 Plant Operating Parameters

	Aerator lbs	Clarifier lbs	Total lbs	RAS mg/L	MLSS mg/L	Clar. SS mg/L	MCRT 7-day	F/M 7-day	SVI Ratio
January	17981	9907	27,887	11060	7148	2341	8.78	0.15	101
February	19172	8553	27,725	11822	7622	2021	8.55	0.13	104
March	21461	11144	32,605	12727	8532	2633	11.81	0.12	106
April	20431	11205	31,636	12522	8122	2648	10.91	0.12	109
Мау	17659	8289	25,949	10939	7021	1959	7.86	0.13	125
June	16660	11305	27,965	10209	6623	2672	8.62	0.15	138
July	15394	8534	23,928	8990	6120	2017	6.35	0.15	145
August	13683	6802	20,485	7893	5440	1607	6.50	0.16	131
September	15734	7748	23,617	9047	6255	1863	6.92	0.15	134
October	17064	9559	26,623	10633	6784	2259	6.54	0.15	128
November	18547	11850	30,397	10967	7373	2800	6.78	0.13	128
December	15125	11402	26,527	10086	6013	2694	7.53	0.22	159
Average	17,409	9,692	27,112	10,575	6,921	2,293	8.1	0.15	126
Maximum	21,461	11,850	32,605	12,727	8,532	2,800	11.8	0.22	159
Minimum	13,683	6,802	20,485	7,893	5,440	1,607	6.4	0.12	101

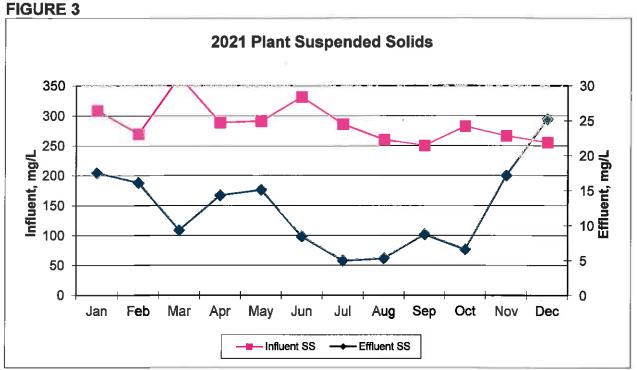


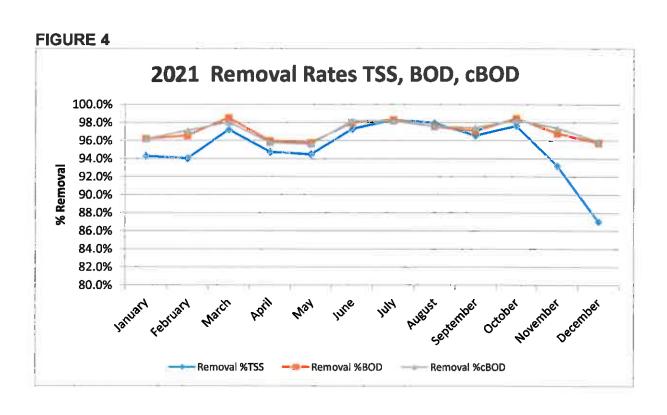


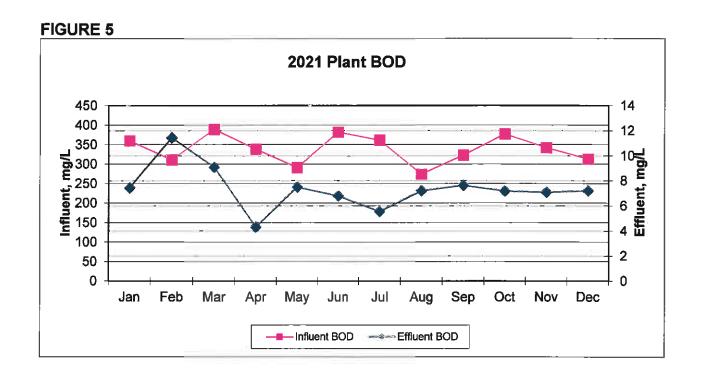


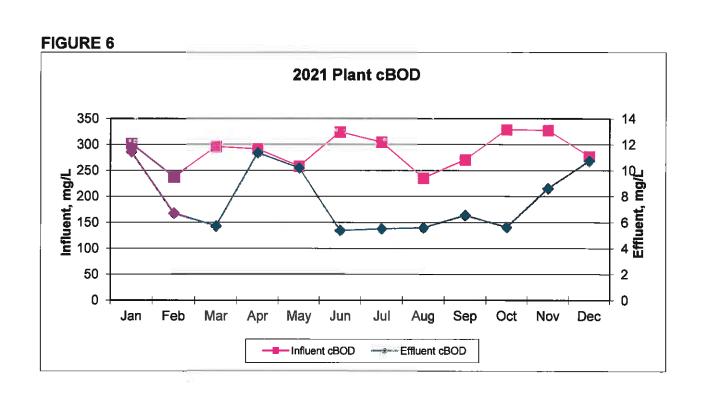




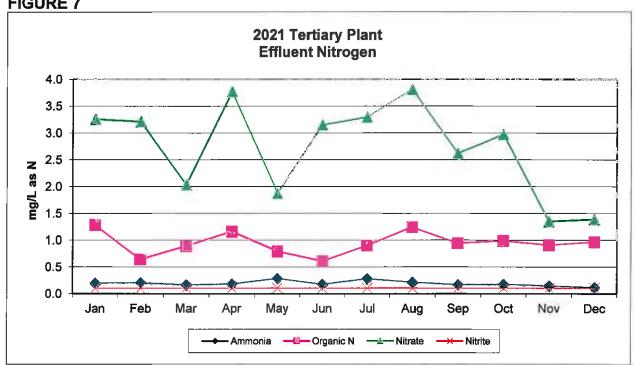




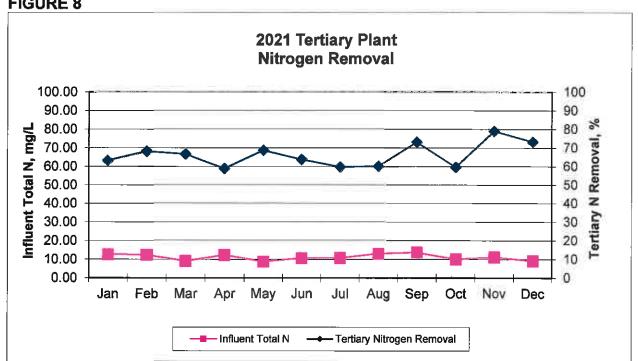


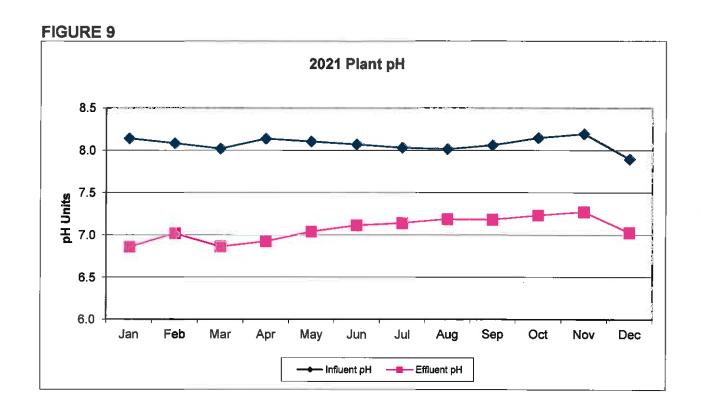


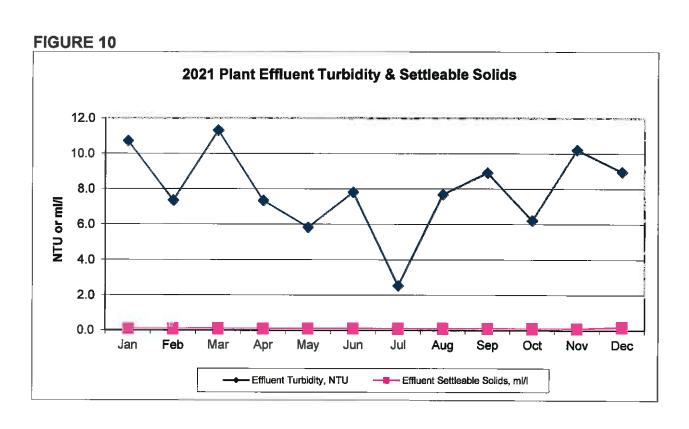














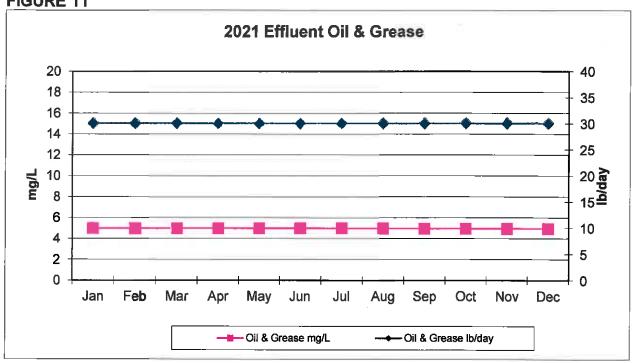


FIGURE 12

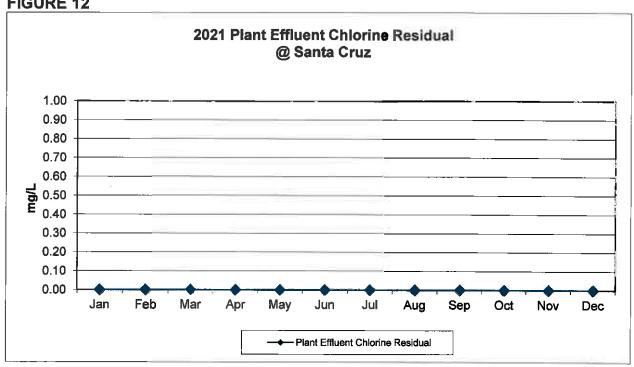
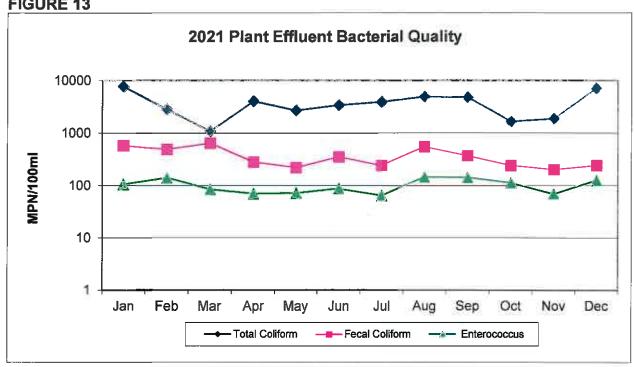
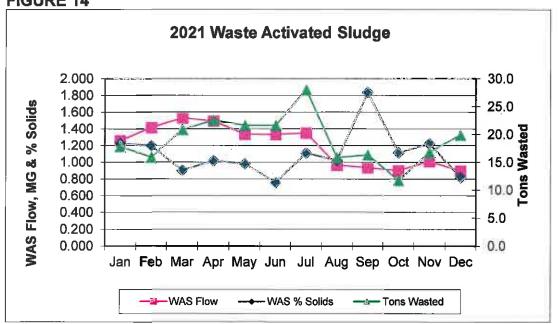


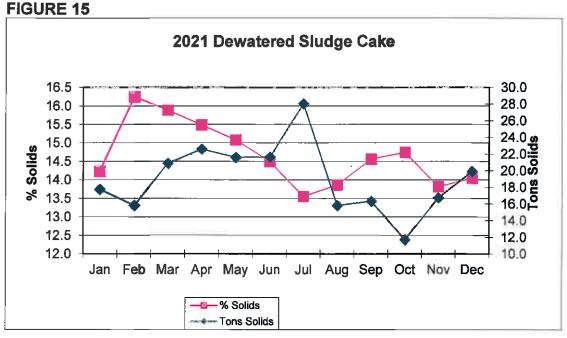
FIGURE 13

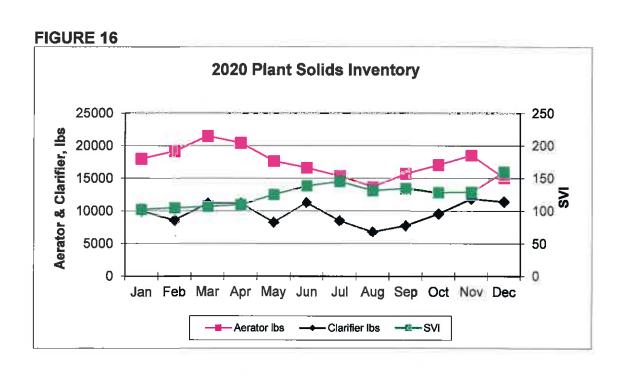


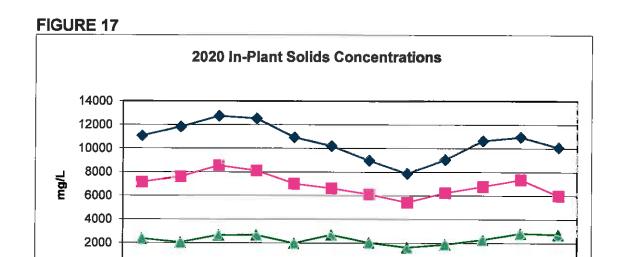












May

- Return Act. sludge

Oct

Dec

Sep

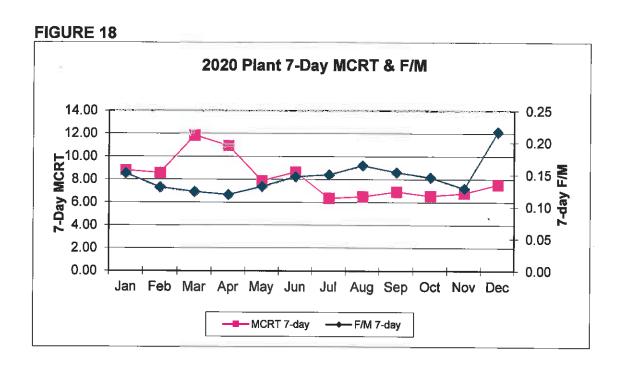
---- Clarifiers

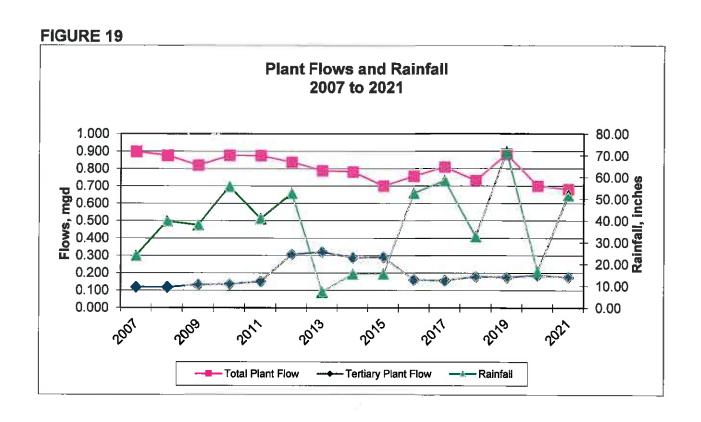
──Mixed Liquor

Jan

Feb

Mar





NPDES PERMIT EFFLUENT VIOLATIONS 2012-2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
January	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0
March	0	0	0	1	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	1	0
May	0	1	0	0	0	0	0	0	0	0
<u>Ju</u> ne	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	2	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0
December	4	0	0	0	0	0	0	0	0	0
Total	4	1	0	1	0	2	0	0	1	0
	Eff. Weekly	Cl2	Eff. Weekly			Eff. Weekly		TCDD		

Eff. Weekly TSS Avg.

& Monthly

TSS Avg.

Avg.BOD CBOD, TSS

sett.solid